What is claimed is:

1. A geothermal system comprising a plurality of geothermal wells, each said geothermal well being operated in cycles, and each said cycle comprising a heat exchange phase followed by a thermal recovery phase, wherein the system operates at least one of said geothermal wells in a heat exchange phase while maintaining the remaining of said geothermal wells in a thermal recovery phase.

2. The geothermal system of claim 1, wherein each said geothermal well is switched from a heat exchange phase to a thermal recovery phase when a predetermined condition or conditions are met.

3. The geothermal system of claim 2, wherein each said geothermal well is switched from a thermal recover phase to a heat exchange phase after the well has been in the former phase for a predetermined period of time, and wherein the well reaches a substantial thermal equilibrium with the earth during said predetermined period of time.

4. The geothermal system of claim 3, wherein the predetermined period of time is no more than 24 hours, and each said geothermal well is switched from a heat exchange phase to a thermal recovery phase when the temperature of ground water supplied by the well reaches a threshold temperature.

5. The geothermal system of claim 1, wherein each said geothermal well undergoes multiple cycles in a heating or cooling season, and each of said multiple cycles includes a heat exchange phase followed by a thermal recovery phase of no more than 24 hours before the next cycle starts.

6. The geothermal system of claim 1, wherein said geothermal wells include a plurality of standing column wells.

7. The geothermal system of claim 6, wherein each said standing column well has a drilled depth per ton of no more than 125 feet per ton, and said standing column wells have a total heat exchange capacity of at least 200 tons.

8. The geothermal system of claim 6, wherein each said standing column well has a drilled depth per ton of no more than 75 feet per ton, and said standing column wells have a total heat exchange capacity of at least 200 tons.

9. The geothermal system of claim 6, wherein said standing column wells are open loop wells, and ground water supplied from each said open loop well is returned to the same well after heat exchange.

10. The geothermal system of claim 9, wherein the center-to-center distance from each said open loop well to a well nearest thereto is from 15 to 50 feet.

11. The geothermal system of claim 9, wherein said standing column wells include at least 10 open loop wells.

12. The geothermal system of claim 9, wherein each said standing column well includes:

an insulating sleeve extending from the bottom of the well to a distance above the water level inside said sleeve, said sleeve dividing the well into two areas, a core area inside said sleeve and an annular area between the outside of said sleeve and the ground wall of the well;

a water pump capable of drawing water from inside the core area and supplying said water to a heat pump; and

a return pipe through which said water is returned from the heat pump to the annular area.

13. The geothermal system of claim 1, wherein said geothermal wells comprise a plurality of closed loop wells.

14. The geothermal system of claim 1, wherein said geothermal wells are divided into at least two groups of wells, each said group being operated in cycles and each said cycle comprising a heat exchange phase followed by a thermal recovery phase, wherein the system operates at least one of said groups in a heat exchange phase while maintaining the remaining groups in a thermal recovery phase.

15. The geothermal system of claim 1, further comprising a heat pump for transferring heat from or to ground water supplied by said geothermal wells.

16. The geothermal system of claim 1, further comprising a supplementary heating or cooling system.

17. A geothermal system comprising a plurality of standing column wells, each said standing column well being operated in cycles, and each said cycle comprising a heat exchange phase followed by a thermal recovery phase, wherein each said standing column well is switched from a heat exchange phase to a thermal recovery phase when a predetermined condition or conditions are met.

18. The geothermal system of claim 17, wherein the system is capable of operating at least one of said standing column wells in a heat exchange phase while maintaining the remaining of said standing column wells in a thermal recovery phase, and wherein each said standing column well undergoes multiple cycles in a heating or cooling season, and the thermal recovery phase of each of said multiple cycles lasts no more than 24 hours before the next cycle starts.

19. A method for operating a geothermal system which includes a plurality of geothermal wells, comprising:

switching each said geothermal well from a heat exchange phase to a thermal recovery phase when a predetermined condition or conditions are met; and

switching each said geothermal well from a thermal recovery phase to a heat exchange phase after the well has been in the former phase for a predetermined period of time;

wherein the geothermal system sustains a heat exchange capacity of no less than a predetermined value.

20. The method of claim 19, comprising switching each said geothermal well from a heat exchange phase to a thermal recovery phase multiple times during a heating or cooling season, wherein the predetermined period of time is no more than 24 hours